Contract CO1: **Add Offering**

- **Description**: Allows the administrator to add a new lesson offering to the system.
- **Preconditions**: Administrator is authenticated.
- **Postconditions**: New offering is added to the system.
- **Input**:
    - Location (string)
    - Lesson Type (string)
    - Schedule (date range, time slots)
    - Capacity (int)
- **Output**: Confirmation message.

Contract C02: **Delete Offering**

- **Description**: Allows the administrator to delete an existing offering.
- **Preconditions**: Administrator is authenticated and offering exists.
- **Postconditions**: Offering is removed from the system.
- **Input**:
    - Offering ID (int)
- **Output**: Confirmation message.

Contract C03: **View Offerings**

- **Description**: Allows the administrator to view all current offerings in the system.
- **Preconditions**: Administrator is authenticated.
- **Postconditions**: Offering list is retrieved.
- **Input**: None
- **Output**: List of offerings.

Contract C04: **View Client Registrations**

- **Description**: Allows the administrator to view registered clients.
- **Preconditions**: Administrator is authenticated.
- **Postconditions**: Client list is retrieved.
- **Input**: None
- **Output**: List of clients.

Contract C05: **View Instructor Registrations**

- **Description**: Allows the administrator to view registered instructors.
- **Preconditions**: Administrator is authenticated.
- **Postconditions**: Instructor list is retrieved.
- **Input**: None
- **Output**: List of instructors.

Contract C06: **Delete Client Account**

- **Description**: Allows the administrator to delete a client account.
- **Preconditions**: Administrator is authenticated and client exists.
- **Postconditions**: Client account is removed.
- **Input**:
    - Client ID (int)
- **Output**: Confirmation message.

Contract C07: **Delete Instructor Account**

- **Description**: Allows the administrator to delete an instructor account.
- **Preconditions**: Administrator is authenticated and instructor exists.
- **Postconditions**: Instructor account is removed.
- **Input**:
    - Instructor ID (int)
- **Output**: Confirmation message.

2. Instructor Operations

Contract C08: **Register**

- **Description**: Allows an instructor to register with the system.
- **Preconditions**: Instructor provides valid credentials.
- **Postconditions**: Instructor account is created.
- **Input**:
    - Name (string)
    - Phone Number (string)
    - Specialization (string)
    - Available Locations (list of strings)
- **Output**: Confirmation message.

Contract C09: **Update Availability**

- **Description**: Allows an instructor to update their availability for lessons.
- **Preconditions**: Instructor is authenticated.
- **Postconditions**: Availability is updated in the system.
- **Input**:
  - Available Locations (list of strings)
  - New Time Slots (list of date-time ranges)
- **Output**: Confirmation message.

Contract C10: **View Available Offerings**

- **Description**: Allows an instructor to view all available offerings they can accept.
- **Preconditions**: Instructor is authenticated.
- **Postconditions**: List of offerings is retrieved.
- **Input**: None
- **Output**: List of available offerings.

Contract C11: **Accept Offering**

- **Description**: Allows an instructor to accept an offering.
- **Preconditions**: Instructor is authenticated and offering is available.
- **Postconditions**: Offering is assigned to the instructor.
- **Input**:
  - Offering ID (int)
- **Output**: Confirmation message.

3. Client Operations

Contract C12: **Register**

- **Description**: Allows a client to register with the system.
- **Preconditions**: Client provides valid credentials.
- **Postconditions**: Client account is created.
- **Input**:
    - Name (string)
    - Phone Number (string)
    - Email (string)
    - Guardian Information (if underage)
- **Output**: Confirmation message.

Contract C13: **Login**

- **Description**: Allows a client to log into their account.
- **Preconditions**: Client provides valid credentials.
- **Postconditions**: Client is authenticated.
- **Input**:
    - Email (string)
    - Password (string)
- **Output**: Authentication token.

Contract C14: **View Offerings**

- **Description**: Allows a client to view all available offerings.
- **Preconditions**: Client is authenticated.
- **Postconditions**: Offering list is retrieved.
- **Input**: None
- **Output**: List of available offerings.

Contract C15: **Book Offering**

- **Description**: Allows a client to book an offering.
- **Preconditions**: Client is authenticated and offering is available.
- **Postconditions**: Offering is marked as booked for the client.
- **Input**:
    - Offering ID (int)
    - Client ID (int)

- **Output**: Confirmation message.

Contract C16: **Cancel Booking**

- **Description**: Allows a client to cancel a booking.
- **Preconditions**: Client is authenticated and booking exists.
- **Postconditions**: Booking is canceled, and offering becomes available again.
- **Input**:
    - Booking ID (int)
- **Output**: Confirmation message.

Contract C17: **View My Bookings**

- **Description**: Allows a client to view their current bookings.
- **Preconditions**: Client is authenticated.
- **Postconditions**: Booking list is retrieved.
- **Input**: None
- **Output**: List of client bookings.